

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	451	(562/33).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/08/15 09:04
L2	505114	calcium	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 05:48
L3	24	l1 and l2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 05:48
L4	1333628	oil	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 05:48
L5	18	l3 and l4	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:10
L6	9	US-2266325-\$.DID. OR US-2402325-\$.DID. OR US-2846466-\$.DID. OR US-2884445-\$.DID. OR US-3260670-\$.DID. OR US-3023231-\$.DID. OR US-2915517-\$.DID. OR US-3007868-\$.DID. OR US-2418894-\$.DID.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:26
L7	14	US-3719596-\$.DID. OR US-2779784-\$.DID. OR US-5804094-\$.DID. OR US-5789615-\$.DID. OR US-5578235-\$.DID. OR US-4615841-\$.DID. OR US-4279837-\$.DID. OR US-2909563-\$.DID.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:06
L8	54	"low base number"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:10
L9	0	l1 and l8	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:10
L10	154654	sulfonate	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:10
L11	42	l8 and l10	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:11

L12	38	I2 and I11	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:11
L13	37	I4 and I12	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:24
L14	23	I6 or I7	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:27
L15	34	I13 not I14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:25
L16	3	I13 and I14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 06:12
L17	69231	heptane	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:54
L18	3	I14 and I17	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:30
L19	12	I15 and I17	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:50
L20	3	"2779784".pn.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 08:51
L21	1	"2779784".pn.	USOCR	OR	ON	2005/08/15 08:51
L22	7	("2779784").URPN.	USPAT	OR	ON	2005/08/15 08:54
L23	9094	chloride near3 free	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:05
L24	1182	I10 and I23	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:05
L25	1	I1 and I24	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:05

L26	57	I13 or I14	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:25
L27	744990	nitrogen	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:25
L28	29	I26 and I27	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:34
L29	11220	SO3	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:35
L30	881	I27 and I29	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:31
L31	298	I27 same I29	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:31
L32	0	I1 and I31	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:31
L33	1	I1 and I30	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:31
L34	1	("4847018").URPN.	USPAT	OR	ON	2005/08/15 09:31
L35	1	I28 and I29	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:34
L36	43105	SO2	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:35
L37	1579	I27 same I36	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:37
L38	0	I1 and I37	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:36

L39	0	I26 and I37	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:36
L40	51728	I29 or I36	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 09:37
L41	4	I1 and I40	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 10:19
L42	2	"diwax benzene"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/15 10:20

## Connecting via Winsock to STN

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FILE COVERS 1907 - 15 Aug 2005 VOL 143 ISS 8  
FILE LAST UPDATED: 14 Aug 2005 (20050814/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

```
=> "low base number"
    2304910 "LOW"
        418 "LOWS"
    2305188 "LOW"
        ("LOW" OR "LOWS")
    638952 "BASE"
    146578 "BASES"
    728501 "BASE"
        ("BASE" OR "BASES")
    113568 "NUMBER"
```

13191 "NUMBERS"  
122440 "NUMBER"  
("NUMBER" OR "NUMBERS")  
L2 5 "LOW BASE NUMBER"  
("LOW" (W) "BASE" (W) "NUMBER")

=> 11 and 12

L3 1 L1 AND L2

=> d 13

L3 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2005:15967 CAPLUS  
DN 142:97166  
TI Chloride-free, low-base-number  
calcium sulfonate manufacture as lubricating oil  
additives  
IN De Kraker, Abraham Robert; Holmes, Steven Allen; Kaushik, Krishna Rangraj  
PA USA  
SO U.S. Pat. Appl. Publ., 10 pp., Cont.-in-part of U.S. Ser. No. 417,788.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005004392	A1	20050106	US 2004-824785	20040415
	US 2004210083	A1	20041021	US 2003-417788	20030417
PRAI	US 2003-417788	A2	20030417		

=> chloride(1)free

1039898 CHLORIDE  
153289 CHLORIDES  
1109816 CHLORIDE

(CHLORIDE OR CHLORIDES)

1206568 FREE  
592 FREES  
1207069 FREE

(FREE OR FREES)

L4 33995 CHLORIDE(L) FREE

=> lo1 and 14

81 LO1

L5 0 LO1 AND L4

=> 11 and 14

L6 3 L1 AND L4

=> d 16 1-3 ti fbib abs

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
TI Chloride-free, low-base-number calcium  
sulfonate manufacture as lubricating oil additives  
AN 2005:15967 CAPLUS  
DN 142:97166  
TI Chloride-free, low-base-number calcium  
sulfonate manufacture as lubricating oil additives  
IN De Kraker, Abraham Robert; Holmes, Steven Allen; Kaushik, Krishna Rangraj  
PA USA  
SO U.S. Pat. Appl. Publ., 10 pp., Cont.-in-part of U.S. Ser. No. 417,788.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 2

PATENT NO.		KIND	DATE	APPLICATION NO.	DATE
PI	US 2005004392	A1	20050106	US 2004-824785	20040415
	US 2004210083	A1	20041021	US 2003-417788	A2 20030417
PATENT FAMILY INFORMATION:					
FAN	2004:878204				
PATENT NO.		KIND	DATE	APPLICATION NO.	DATE
PI	US 2004210083	A1	20041021	US 2003-417788	20030417
	WO 2004094366	A1	20041104	WO 2004-US11684	20040415
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2005004392	A1	20050106	US 2004-824785	A 20040415
				US 2003-417788	A2 20030417

AB Low-base-number, **chloride-free calcium sulfonates**, useful as lubricating oil additives, are synthesized from a sulfonic acid solution containing a miscible solvent by: (1) removing dissolved or entrained SO<sub>2</sub> and SO<sub>3</sub>, (2) adding and mixing Ca(OH)<sub>2</sub> at a 1-5:1 mol ratio water-sulfonic acid and 1-10:1 mol ratio Ca(OH)<sub>2</sub>-sulfonic acid mixture, (3) heating the reaction mixture to 40-200° (4) separating excess Ca(OH)<sub>2</sub>, (5) removing solvent to produce an intermediate concentrated product, and (6) concentrating the intermediate product. The reaction step (step 3) is carried out for ≤60 min (preferably ≤30 min), with excess Ca(OH)<sub>2</sub> removed by centrifugation. The product **calcium sulfonate** is recovered as an oil-soluble product with viscosity of 10-100 cSt at 100°.

L6 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN  
 TI Production of **chloride-free calcium sulfonates** as lubricant and fuel additives  
 AN 2004:878204 CAPLUS  
 DN 141:352532  
 TI Production of **chloride-free calcium sulfonates** as lubricant and fuel additives  
 IN De Kraker, Abraham Robert; Holmes, Steven Allen; Kaushik, Krishna Rangraj  
 PA USA  
 SO U.S. Pat. Appl. Publ., 9 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 2

PATENT NO.		KIND	DATE	APPLICATION NO.	DATE
PI	US 2004210083	A1	20041021	US 2003-417788	20030417
	WO 2004094366	A1	20041104	WO 2004-US11684	20040415
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE,				

ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2005004392	A1	20050106	US 2003-417788	A 20030417
			US 2004-824785	20040415
			US 2003-417788	A2 20030417

PATENT FAMILY INFORMATION:

FAN 2005:15967

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2005004392	A1	20050106	US 2004-824785	20040415
				US 2003-417788	A2 20030417
	US 2004210083	A1	20041021	US 2003-417788	20030417

AB Low-base-number **chloride-free calcium sulfonates** are prepared from a sulfonic acid feedstock solution (typically petroleum sulfonates) by adding 1-20 vols. of a miscible solvent (vs. sulfonic acid) and removing dissolved or entrained SO<sub>2</sub> or SO<sub>3</sub>, (2) mixing the sulfonic acid with 1-5 mol water and 1-10 mol Ca(OH)<sub>2</sub> (per mole sulfonic acid), (3) heating the mixture to 40-200°, (4) separating excess Ca(OH)<sub>2</sub> and Ca salts, and (5) recovering solvent, oil, and **chloride-free** product. The additives are especially useful as lubricant and fuel additives. A preferred solvent is heptane.

L6 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2005 ACS on STN

TI Process for preparing overbased **calcium sulfonates**

AN 1990:122039 CAPLUS

DN 112:122039

TI Process for preparing overbased **calcium sulfonates**

IN Matthews, Leonard A.; Powers, William J., III; Przybyla, Henry M.; Whittle, Joanne R.; Perciful, Jerry C.

PA Texaco Inc., USA

SO U.S., 5 pp.

CODEN: USXXAM

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4879053	A	19891107	US 1988-217540	19880711
				US 1988-217540	19880711

AB In the preparation of an overbased Ca sulfonate from a **chloride-free** Ca sulfonate and Ca oxide, 0.1-1 weight% (preferably 0.4-0.9 weight%) of a promoter selected from alkali and alkaline earth halides (e.g., CaCl<sub>2</sub>) is added to improve the overbasing reaction rate. The sulfonates are used as detergents and reserve alkalinity lubricating oil additives.

=> logoff hold

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION

FULL ESTIMATED COST

39.52 39.73

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE	TOTAL
ENTRY	SESSION

CA SUBSCRIBER PRICE

-2.19 -2.19

SESSION WILL BE HELD FOR 60 MINUTES

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